

## ABSTRACT

The invention provides a method for forming a capacitor that enables to form HSG-Si on the entire surface of the exposed surface of a cylindrical bottom electrode. A core pattern is formed on the cylinder core layer on a semiconductor substrate, and an amorphous silicon film is formed so as to cover the core pattern. The amorphous silicon film on the cylinder core layer is removed so that the amorphous silicon film remains on the inside wall of the core pattern, and a bottom electrode comprising the amorphous silicon film is formed on the inside wall of the core pattern. The cylinder core layer that is the component of the core pattern is etching-removed, and then the natural oxide film generated on the surface of the bottom electrode and the amorphous silicon surface layer that is the component of the bottom electrode is etching-removed. Thereafter, HSG-Si is formed on the surface of the bottom electrode.